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EMERGING PROGRAMS OF VOCATIONAL AND TECHNICAL EDUCATION IN SECONDARY SCHOOLS OF MISSOURI IN RELATION TO MANPOWER NEEDS. (D.ED. THESIS SUMMARY).

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THE NUMBER AND TYPES OF VOCATIONAL AND TECHNICAL EDUCATION PROGRAMS BEING DEVELOPED BY SCHOOL DISTRICTS WERE STUDIED TO FIND A STATEWIDE PATTERN AND TO ASCERTAIN HOW WELL THE PRESENT AND PROPOSED PROGRAMS RELATE TO PROJECTED MANPOWER NEEDS. DATA CONCERNING PRESENT REIMBURSABLE PROGRAMS, SECURED FROM THE MISSOURI STATE DEPARTMENT OF EDUCATION, WERE TABULATED AS A BASIS FOR PROJECTING EXPANSION. ADDITIONAL DATA WERE COLLECTED BY FOUR INFORMATION FORMS SENT TO 507 SUPERINTENDENTS OF SECONDARY SCHOOL DISTRICTS, 506 DISTRICT BOARD PRESIDENTS, AND 17 LOCAL VOCATIONAL DIRECTORS. THE CHI-SQUARE TEST OF HOMOGENEITY WAS USED TO ASCERTAIN THE RELATIVE MERIT OF A GIVEN PROGRAM IN RELATION TO PLANS FOR ESTABLISHING OR IMPLEMENTING IT. BUREAU OF THE CENSUS 1960 LABOR FORCE STATISTICS WERE PROJECTED TO 1970 TO ASCERTAIN MANPOWER NEEDS FOR MAJOR OCCUPATIONAL GROUPS IN THE STATE. SOME OF THE CONCLUSIONS WERE--(1) THERE IS A SERIOUS INADEQUACY OF VOCATIONAL EDUCATION PROGRAMS AMONG DISTRICTS OF ALL SIZES, (2) MANY PRACTICAL ARTS COURSES IN BUSINESS EDUCATION AND INDUSTRIAL ARTS WILL PROBABLY BE CONVERTED TO REIMBURSABLE VOCATIONAL COURSES, (3) MANY SUPERINTENDENTS ARE UNAWARE OR INDIFFERENT TO NEEDS IN HEALTH, TECHNICAL, AND TRADE AND INDUSTRIAL OCCUPATIONS, (4) LESS IMPORTANCE IS PLACED ON VOCATIONAL PROGRAMS FOR POST-HIGH SCHOOL YOUTH AND ADULTS, (5) A REIMBURSEMENT RATE OF 50 PERCENT WILL BE NEEDED TO ESTABLISH PROGRAMS IN A MAJORITY OF SCHOOL DISTRICTS, (6) AN IMBALANCE EXISTS IN ENROLLMENT AS RELATED TO OCCUPATIONAL GROUPS, AND (7) THE GREATEST PERCENT OF INCREASE WILL BE IN COURSES NOW HAVING LOW ENROLLMENT, BUT EXPANSION WILL FALL FAR SHORT OF NEEDS. (MM)

W.S.

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Emerging Programs of Vocational and Technical Education in Secondary Schools of Missouri in Relation to Manpower Needs

By
James B. Karnes

UNIVERSITY OF MISSOURI
COLUMBIA, MISSOURI

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James B. Karnes

A summary report of a dissertation study by the same title submitted by the writer in partial fulfillment of the requirements for the degree of Doctor of Education in the Graduate school at the University of Missouri, 1966.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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PREFACE

In November of 1961 the Panel of Consultants on Vocational Education began the task of reviewing and evaluating our national program of vocational education. Out of their study came recommendations for the improvement, expansion, and redirection of the program. These recommendations, in turn, culminated in the passage by the Congress of the Vocational Education Act of 1963, which included amendments to modernize previously existing legislation on vocational education.

Following the passage of the new Vocational Education Act and the publication of guidelines for its administration, the State Board for Vocational Education in Missouri drew up a new State Plan. As the provisions of the New Act and the new State Plan are implemented, considerable change from traditional programs may be expected, both in content and organization. By 1967 Missouri's share of the federal funds authorized for vocational education will be approximately five times that available in 1964, and, of course, state and local funds will increase accordingly since matching is required.

School administrators and school board officials are making plans for the utilization of these increased funds and new program possibilities to provide more adequate vocational instruction for the youth and adults in their communities. And as this is being written, the State Legislature is considering legislation for a further development of vocational-technical education in the State. One question of major importance is: will these changes and new developments be made in accordance with the manpower needs of the state and the nation?

Reported here in summary form are the results of a statewide study dealing with this question. It is believed that the report will be of interest and assistance to educators generally, and particularly to administrators and school board members, as it describes manpower needs and reflects the interests, plans, and opinions of these groups as they undertake to structure programs to meet these needs and the needs of their people.

H. H. LONDON
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Purpose of the Study

The purpose of this study was to ascertain the number and types of vocational and technical education programs that are being developed and anticipated by Missouri school districts. The study attempted to reveal a statewide pattern of developments and to ascertain how well the present and proposed programs relate to the projected manpower needs of Missouri and the United States.

An attempt was made, in constructing the instrument used in the study, to allow respondents to reveal plans for new programs and modifications to existing programs which may be helpful in giving direction to the developments ahead. Such information should be useful in providing state department personnel and local officials with assistance in effectively establishing realistic and meaningful programs of vocational education.

More specifically, this study attempted to answer the following questions:

1. How well do existing vocational education programs, together with the new and proposed programs, correspond with the projected manpower needs in the state labor force?
2. What assistance do administrators and school boards desire in establishing and expanding programs?
3. What are the attitudes of superintendents and school board presidents toward the reimbursable programs now in operation?
4. How many public secondary school districts anticipate new and expanded programs of vocational and technical education, and what is the nature of these programs?
5. What is the anticipated increase in numbers of new teachers, supervisors and administrative personnel needed to fill new positions?
6. In view of new programs which may receive reimbursement, what effects will these programs have on practical arts courses, especially industrial arts, general home economics and business education courses?
7. What are the implications of emerging vocational education programs for teacher education, supervision, leadership development and curriculum design?

Definition of Terms

Terms, as they are used in this study, are defined as follows:

Area Vocational School refers to a school or program involving a large geographical territory, usually including more than one local administrative unit. It offers vocational and technical education to students who are preparing to enter the labor market. Such schools may be operated by local communities or by the State.

Business and Office Education refers to a program of preparatory and in-service education leading to employability or advancement in office occupations as well as the vocational business education courses providing students with competencies which are needed in managing personal business affairs.

Cooperative Occupational Education refers to a program for regular students in school who receive part-time vocational instruction arranged between the school

and employers as well as related study in the school which is coordinated with occupational experience provided on the job. The hours spent in on-the-job training during the school day must equal or exceed the hours spent in school. Students may be enrolled in industrial, distributive and office occupational fields.

Distributive Education refers to a program of instruction in marketing, merchandising, and management which provides both preparatory training and training needed for in-service advancement.

Home Economics Education refers to a program of instruction planned to assist youth and adults to understand and solve problems in home and family living and/or to prepare for employment and upgrading in occupations related to home economics subjects involving knowledge and skills other than the professions.

Industrial Arts refers to instructional shop work of a nonvocational type which provides experiences centered around the industrial and technical aspects of materials, processes and understandings of industry as well as provides exploratory experiences helpful in choosing a vocation.

Industrial Education is a generic term which applies to all types of education related to industry including industrial arts education, vocational-industrial education, and industrial-technical education.

Practical Arts Education refers to a functional type of education which provides learning experiences in raw production, processing, distribution and consumption of our natural resources along with the skills and technical development in these areas.

Single-Skilled Occupations refers to those occupations which involve the performance of a limited variety of skills with a limited use of technical information but requiring considerable manual dexterity.

Technical Education refers to occupational education in which success is dependent largely upon technical information and understanding of the laws of science and principles of modern technology.

Trade and Industrial Education refers to instructional programs which are designed to develop manipulative skills and technical knowledge related to industrial occupational fields. This training includes both preparatory and in-service or upgrading training for workers employed.

Vocational Agriculture refers to an instructional program for regular school students as well as out-of-school youth and adults designed for improving agricultural methods for both beginning and advanced farmers. It involves the production of farm commodities, conservation of soil, farm management and other farm-related activities.

Vocational Education refers to vocational or technical training or retraining which is given in schools or classes under public supervision and control in reimbursable programs designed to fit individuals for gainful employment other than the professions.

Vocational Education Act of 1963 refers to an Act designed to maintain, extend and improve existing programs of vocational education, to develop new programs of vocational education and provide part-time employment for youth who need earnings to continue their vocational training on a full-time basis. Programs in this Act are designed for those in school as well as out of school

of all ages as well as those with special educational handicaps so that all persons will have ready access to occupational training of high quality which is specifically geared to fit them for gainful employment.

Sources of Data and Method of Study

Data concerning present reimbursable programs and recent developments in vocational and technical education were secured from records and statistical reports on file in the Division of Vocational Education, Missouri State Department of Education. The number and types of reimbursable vocational and technical programs currently in operation were tabulated to serve as a basis for projecting expansion.

Another source of data was an information form which was perfected and sent to the 507 superintendents of secondary school districts and to the 17 full-time or part-time local directors of vocational education. An abbreviated version of the form was sent to the 506 secondary school district board presidents.

One section of each of the forms required a dual response: the first phase asked the respondent to indicate the relative merit that particular programs had or would seem to have for his community, while a second phase asked the respondent to indicate the possibility of such a program being implemented in his system.

The chi-square test of homogeneity was used to ascertain the degree to which the relative merit a given program had, or would seem to have, in relation to plans to implement such a program.

The data were then analyzed and reported in narrative and statistical form. The general method of approach was that of the normative-survey.

The present and projected enrollments in vocational and technical programs were classified by major occupational groups according to the Bureau of the Census for the labor force of Missouri. The manpower needs of the state based on the 1960 labor force were projected to 1970 as ascertained by utilizing long-term manpower projections for the major occupational groups.

Federal, State and Local Expenditures for Vocational and Technical Education in Missouri

Federal funds for vocational education have been provided through the Smith-Hughes Act of 1917, the George-Barden Act of 1946 and its supplemental acts, the Manpower Development and Training Act of 1962, the Vocational Education Act of 1963, and the Elementary and Secondary Education Act of 1965.

There has been only a slight increase each year in appropriation of state funds for vocational education, lagging far behind local and federal sources.

The extent to which state funds for vocational education in Missouri have been provided in comparison with federal and local expenditures is illustrated in Figure 1. Essentially there has been no increase in state money appropriated over and above what would have probably been made available with no increase in federal funds.

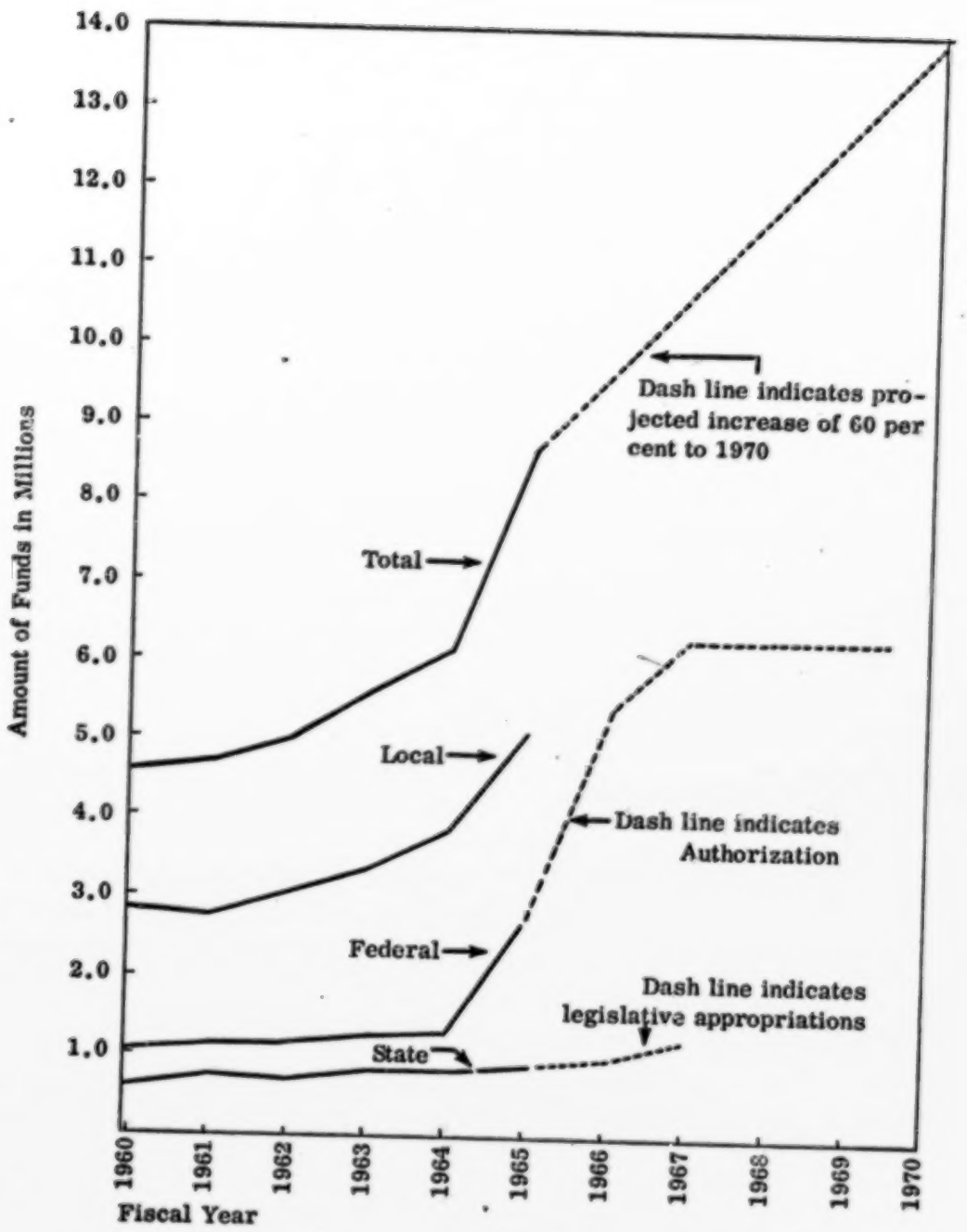

FIGURE 1
COMPARISON OF LOCAL, STATE AND FEDERAL FUNDS EXPENDED FOR VOCATIONAL EDUCATION IN MISSOURI DURING 1960 TO 1965 WITH FUTURE PROJECTIONS

As shown in table I, the per cent of expenditures on vocational programs is far out of line with the per cent of employment in occupations to which they are related. While expenditures in agriculture and home economics far exceed the per cent of employment in these areas, expenditures in all other vocational fields were much below the per cent of employment in the occupation for which they prepare.

TABLE I--EXPENDITURES FOR VOCATIONAL EDUCATION BY TYPE OF PROGRAM IN RELATION TO DISTRIBUTION OF THE LABOR FORCE IN MISSOURI IN 1965

Type of Vocational Program	Total Federal, State and Local Expenditures		Per Cent* Missouri Labor Force
	Amount	Per Cent	
Agriculture	2,030,804	23.65	6.10
Business & Office	772,097	8.99	16.54
Distributive Ed.	457,810	5.33	8.35
Home Economics	1,951,423	22.73	11.61**
Trades & Industry	1,740,194	20.27	36.63
Health Occup. *#	303,673	3.54	
Technical Ed. *#	880,692	10.26	20.77*#
Guidance	15,317	.17	------
Construction	434,550	5.06	------
Total	8,586,562	100.00	100.00

*Major occupational groups combined as related to vocational programs.
**Service occupations to which home economics is closely related.
*# Included in professional, technical, managerial, official and proprietor.

Status of Vocational and Technical Education Programs in Missouri

During the 1964-65 school year courses in business and office occupations were not reimbursed, but more districts offered advanced courses in this area than in any of the regular reimbursable areas. As illustrated in table II, some type of reimbursable vocational program was offered in 366 of the 506 secondary school districts in the state. Vocational home economics and vocational agriculture were offered in far more districts than the other types of reimbursable vocational courses. However, most of these districts employed only one teacher in each program.

Relatively few school districts offered other types of vocational programs, ranging from 73 districts with trade and industrial education to 14 districts with health occupations courses, but the majority of such districts employed several vocational teachers.

Vocational agriculture and home economics programs were offered by districts with relatively low enrollment, while the other vocational programs were

TABLE II--SUMMARY OF VOCATIONAL AND TECHNICAL EDUCATION PROGRAMS IN MISSOURI FOR THE 1964-65 SCHOOL YEAR

Type of Vocational Program	Program Data					
	Number Districts	Number Teachers	Prep.	Enrollment		
				Part-Time	Evening	Total
Agriculture	240	248	12,180	756	3,475	16,411
Business and Office*	318**	***	42,482	***	***	42,482
Distributive Education						
Preparatory*	10	***	668	***	***	668
Cooperative	54	84	#	2,056	#	2,056
Adult	69	52	#	#	4,304	4,304
Health Occupations	14	76	909	302	316	1,527
Home Economics	296	371	34,386	#	8,921	43,307
Technical Education	24	108	1,388	#	1,276	2,664
Trade and Industrial	73	504	4,722	3,140	3,878	11,740
Total	366##	1,443	96,735	6,254	22,170	125,159

*Only Courses possibly reimbursable beginning 1965-66 school year.
**Number of districts offering secretarial practice only.
***Data not available.
#Does not apply.
##Total number districts offering any type reimbursable vocational program.

offered predominantly by districts with average and larger enrollments, as revealed in table III. Over one-half of the districts included in the study had an enrollment of less than 250 high school students and offered predominantly agriculture and home economics as the only vocational programs.

Adequacy of Educational Programs to Serve Occupational Training Needs

As shown in table IV, over three-fourths of the respondents indicated that their present programs did not adequately serve the occupational needs of either regular high school students, dropouts or adults. Very little difference was noted among school districts of different sizes with respect to the adequacy of their occupational training programs to meet existing needs, but what difference there was suggests that the more inadequate programs appear to be in the larger school districts.

Changes Needed in Order to Properly Meet Occupational Training Needs of Youth and Adults

As indicated in table V, over 85 per cent of the combined reports of school board presidents and superintendents indicated that the vocational education program at the high school level should be expanded in their districts. About three-fourths of the respondents reported that their vocational program at the post-secondary and adult levels should be expanded. Virtually no respondents indicated that vocational programs at the high school, post-high school or adult level should be reduced. Very little difference exists in the desire to expand vocational programs among the various sizes of school districts.

Probable Expansion of Vocational Programs in Missouri During the Next Five Years

As indicated in table VI, a total of over 2282 high school courses are expected to be added in all types of vocational education programs combined, with the largest number—591 courses—expected to be added in business and office occupations in 257 districts. Most respondents indicated that they expected to add two vocational courses to their curriculum; 381 superintendents anticipated such additions.

Additional New Vocational Teaching and Supervisory Personnel Anticipated

An additional 1815 vocational teachers are expected to be added in the next five years. This includes 275 vocational counselors in 223 school districts. The largest number of positions was reported in school districts expecting to add two vocational teachers. Only 10 superintendents indicated that they planned to add no vocational teachers in their systems. The largest number of full-time teaching positions anticipated was in business and office occupations; 350 such positions

TABLE III--REIMBURSABLE VOCATIONAL EDUCATION PROGRAMS IN SECONDARY SCHOOL DISTRICTS OF MISSOURI BY SIZE OF SCHOOL DISTRICT

Type of Vocational Program	High School Enrollment in District						
	Less than 250 (284)#	250-499 (126)	500-999 (50)	1000-1999 (28)	2000-2999 (4)	Over 3000 (14)	Total (506)
Agriculture	108	86	32	9	2	3	240
Home Economics	110	114	43	19	3	7	296
Distributive Education*	1	8	15	16	4	10	54
Technical Education	1	5	1	9	1	7	24
Trade & Industrial	11	20	11	15	2	10	69
Health Occupations	0	3	2	6	0	3	14

#Number in parentheses represents actual number of districts in Missouri with respective enrollment shown.
*Data available only for cooperative distributive education.

TABLE IV--EXTENT TO WHICH EDUCATIONAL PROGRAM SERVES OCCUPATIONAL NEEDS AS REPORTED BY RESPONDENTS*

Question: Do you think your present educational program adequately serves the occupational needs of youth and adults in your community?	Groups Served							
	High School Students		High School Graduates		High School Dropouts		Adults	
Response:	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Yes	136	17.44	73	9.36	29	3.72	53	6.79
No	596	76.41	616	78.97	662	84.87	587	75.26
Uncertain	46	5.90	74	9.49	68	8.72	118	15.13
No Response	2	.25	17	2.18	21	2.69	22	2.82
Total	780	100.00	780	100.00	780	100.00	780	100.00

*N = 780 Respondents consists of 458 superintendents and 322 school board presidents.

TABLE V--CHANGES IN VOCATIONAL EDUCATION WHICH RESPONDENTS INDICATED SHOULD BE MADE

TABLE V--CHANGES IN VOCATIONAL EDUCATION WHICH RESPONDENTS INDICATED SHOULD BE MADE IN ORDER TO PROPERLY MEET THE NEEDS OF YOUTH AND ADULTS

Change Needed	Level of Program					
	High School		Post-High School		Adult Evening	
	Number	Per Cent*	Number	Per Cent*	Number	Per Cent*
Expanded	665	85.26	594	76.15	567	72.69
Reduced	1	.13	0	0.00	0	0.00
Modified	60	7.69	28	3.59	29	3.72
Remain Same	33	4.23	27	3.46	31	3.97
Uncertain	17	2.18	97	12.44	118	15.13
No Response	4	.51	34	4.36	35	4.49
Total	780	100.00	780	100.00	780	100.00

*Based on 780 respondents consisting of 458 superintendents, 322 board presidents, representing 482 school districts.

TABLE VI--VOCATIONAL COURSES SUPERINTENDENTS ANTICIPATE WILL BE ADDED BY OCCUPATIONAL FIELDS*

Occupational Fields		Number of Courses 1	2	3	4	5 or more**	Total Number	Mean	Total Districts
Agricultural Occupations	Number	41	51	23	26	1 (5)	321	2.26	142
	Per Cent*	8.95	11.14	5.02	5.68	.22			31.01
Business & Office Occupations	Number	50	102	63	36	6 (34)	591	2.30	257
	Per Cent*	10.92	22.27	13.75	7.86	1.31			56.11
Distributive Occupations	Number	48	34	16	8	1 (5)	201	1.88	107
	Per Cent*	10.48	7.42	3.40	1.75	.22			23.27
Health Occupations	Number	57	26	7	3	0	142	1.53	93
	Per Cent*	12.45	5.68	1.53	.66				20.32
Home Economics Occupations	Number	53	83	37	18	3 (18)	420	2.16	194
	Per Cent*	11.57	18.12	8.08	3.93	.66			42.36
Technical Occupations	Number	42	34	22	12	3 (21)	243	2.15	113
	Per Cent*	9.17	7.42	4.80	2.62	.66			24.67
Trade & Industrial Occupations	Number	43	51	38	22	3 (17)	364	2.32	157
	Per Cent*	9.38	11.14	8.30	4.80	.66			34.28
Total Number of Courses		334	381	206	125	17 (100)	2282	2.15	

*Based on reports from 458 districts
**Calculated on basis of total number written in as shown in parentheses.

were expected to be added. The fewest number was in health occupations; 133 such positions were expected to be added.

A total of 253 superintendents indicated that they would each add one or more part-time or full-time supervisors of vocational education to their school districts.

Desirability of Practical Arts Subjects Serving More Purposefully the Occupational Needs of Students

As shown in table VII, about two-thirds of the superintendents and school board presidents indicated that business education and industrial arts courses should serve more purposefully the occupational needs of students. About 45 per cent of the respondents indicated that home economics should serve such needs more effectively while less than one-fourth indicated that general agriculture should serve these needs.

The viewpoint of local directors of vocational education concerning the practical arts subjects serving more purposefully the occupational needs of students is indicated in Table VIII. The practical arts subject of business education received the highest frequency of response from the local directors, with about two-thirds indicating the desirability of such courses serving more purposefully the occupational needs of students. The desirability of industrial arts serving more purposefully the occupational needs of students was reported by 41.18 per cent of the local directors.

Plans for Making Vocational Courses Available to Students Now Enrolling in More Than Two Years of Practical Arts Courses

As shown in table IX, about 40 per cent of the superintendents reporting indicated that they expected to restructure business education courses and offer vocational business and office courses in their place. About the same number indicated that they expected to convert industrial arts courses to vocational courses. About six per cent of the respondents indicated plans for converting general agricultural subjects to vocational subjects and 15 per cent of the respondents indicated similar plans for home economics.

Factors Involved in Making Decisions Concerning the Establishment and Operation of Vocational Programs

The "number of non-college bound youth in the student body" was reported by the largest number of respondents as being the most important factor for decision making in establishing vocational programs in communities. As table X indicates, nearly two-thirds of the superintendents and board presidents rated this item to be of "much value". "Area and state labor market needs" was indicated by about 60 per cent of them as being of "much value" in establishing programs. Of the various factors indicated, "development of vocational programs in other communities" was thought to be of least importance in establishing vocational programs.

TABLE VII--DESIRABILITY OF VARIOUS PRACTICAL ARTS SUBJECTS SERVING MORE PURPOSEFULLY THE OCCUPATIONAL NEEDS OF STUDENTS

Practical Arts Subjects	Respondents Reporting					
	Superintendents*		Board Presidents**		Total***	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Business Education	311	67.90	209	64.91	520	66.67
General Agriculture	46	10.04	75	23.29	121	15.51
General Home Economics	110	24.01	145	45.03	255	32.69
Industrial Arts	275	60.04	202	62.73	477	61.15

*Based on 458 returns including three local directors reporting for their superintendents.
**Based on 322 returns.
***Based on 780 returns representing 482 secondary school districts.

TABLE VIII--DESIRABILITY OF PRACTICAL ARTS SUBJECTS SERVING MORE PURPOSEFULLY THE OCCUPATIONAL NEEDS OF STUDENTS AS REPORTED BY LOCAL DIRECTORS

Does your school have any practical arts subjects which you believe should serve more purposefully occupational needs of students taking them?	Practical Arts Subjects									
	Business Education		General Agriculture		General Home Economics		Industrial Arts		Other	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Yes	11	64.71	2	11.76	4	23.53	7	41.18	0	0.00
No	3	17.65	5	29.41	7	41.18	7	41.18	2	11.76
Uncertain	1	5.88	0	0.00	1	5.88	1	5.88	0	0.00
No Response	2	11.76	10	58.83	5	29.41	2	11.76	15	88.24
Total	17	100.00	17	100.00	17	100.00	17	100.00	17	100.00

TABLE IX--NUMBER OF DISTRICTS PLANNING TO CONVERT PRACTICAL ARTS COURSES INTO VOCATIONAL OFFERINGS AS REPORTED BY SCHOOL SUPERINTENDENTS

Plans for Restructuring Subjects	Practical Arts Subject							
	Business Education		General Agriculture		General Home Economics		Industrial Arts	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Yes	181	39.52	29	6.33	69	15.07	151	32.97
No	175	38.21	220	48.04	222	48.47	175	37.99
Uncertain	77	16.81	33	7.20	49	10.70	76	16.59
No Response	25	5.46	176	38.43	118	25.76	57	12.45
Total	458	100.00	458	100.00	458	100.00	458	100.00

TABLE X--IMPORTANCE ATTACHED BY SUPERINTENDENTS, SCHOOL BOARD PRESIDENTS AND LOCAL DIRECTORS TO FACTORS INVOLVED IN MAKING DECISIONS CONCERNING THE ESTABLISHMENT AND OPERATION OF VOCATIONAL PROGRAMS IN LOCAL SCHOOLS

Factors on Decision Making	Importance Attached to Factors														
	Superintendents[1]					Board Presidents[2]					Local Directors[3]				
	MV[4]	SV[5]	NV[6]	UC[7]	NR[8]	MV	SV	NV	UC	NR	MV	SV	NV	UC	NR
Local Labor Market Needs	33*	51	5	7	5	34*	52	5	5	4	76*	24	0	0	0
Area and State Labor Market Needs	61	29	0	5	5	59	32	1	4	3	88	12	0	0	0
Recommendations of Advisory Committee	23	49	6	13	9	23	49	7	15	6	71	29	0	0	0
Recommendations of School Staff	30	54	1	8	7	43	46	2	5	4	12	71	6	6	6
Development of Vocational Programs in Other Communities	21	54	8	10	7	23	52	10	11	4	18	65	12	6	0
Number of Non-College Bound Youth in Student Body	65*	23	1	5	5	62*	25	1	6	5	82*	6	0	6	6
Other	3	2	1	8	86	5	2	1	9	83	18	0	0	0	82

[1] N = 458
[2] N = 322
[3] N = 17
[4] Much Value
[5] Some Value
[6] No Value
[7] Uncertain
[8] No Response
* Per cents rounded to nearest whole number

Emphasis on Certain Phases of Vocational Education for the Professional Preparation of School Administrators

As shown in table XI, almost one-half of the superintendents and school board presidents expressed the belief that more emphasis should be placed, in the training of school administrators, on such things as "legislation and provision of state plans," "organization and administration," and "principles and practices of vocational education programs." Over 60 per cent of the superintendents and 55 per cent of the school board presidents indicated that more emphasis should be placed on "in-service short courses on vocational education."

The local directors indicated uniformly that they believed more emphasis should be placed, in the preparation of school administrators, on all phases of vocational education with the exception of "principles and practices in vocational education." Only about 40 per cent believed that more emphasis should be placed on this item.

Importance of Various Purposes for Which Federal and State Money May Be Applied in Vocational Programs

Over 85 per cent of the respondents reported that federal and state funds used for providing "equipment for shops and laboratories" would be of "much value."

Roughly, 82 per cent of the respondents indicated that "reimbursement for salary of vocational teachers" was of "much value" in operating vocational education programs. About two-thirds of the respondents indicated that funds for "vocational counseling services" and the "training of teachers and leaders for vocational education" would be of "much value." Only one-half of the respondents indicated that funds would be of "much value" for "cooperative programs, supervised work-study and placement."

The 17 local directors were in close agreement with the superintendents and board presidents in the use of federal and state funds for the operation of vocational programs.

Amount of Reimbursement Necessary to Promote Additional Vocational Courses in School Districts

The rate of reimbursement which superintendents and school board presidents indicated that their districts would need for the establishment of vocational programs was generally well over 50 per cent. A wide variation of necessary reimbursement was reported among the districts.

Nearly 20 per cent of the superintendents indicated that 100 per cent reimbursement would be necessary to establish vocational counseling services. About two-thirds of the respondents indicated that 50 to 100 per cent reimbursement was essential in order to establish a vocational program in their communities.

TABLE XI--EMPHASIS ON THE STUDY OF VOCATIONAL EDUCATION WHICH THE RESPONDENTS BELIEVED SHOULD BE INCLUDED IN THE PREPARATION OF SCHOOL ADMINISTRATORS

Phase of Vocational Education	Degree of Emphasis														
	Superintendents[1]					Board Presidents[2]					Local Directors[3]				
	M[4]	AR[5]	L[6]	UC[7]	NR[8]	M	AR	L	UC	NR	M	AR	L	UC	NR
Legislation and Provisions of the State Plan	43*	37	2	13	4	37	39	2	16	5	65	29	0	6	0
Organization and Administration of Vocational Education	52	34	1	10	3	47	33	1	14	5	65	35	0	0	0
Principles and Practices of Vocational Education	43	40	1	11	4	45	31	1	15	6	41	47	0	0	6
In-service Short Courses on Vocational Education	61	21	1	13	5	55	21	1	17	6	71	18	0	6	6
Other	1	2	0	8	89	3	2	0	10	85	0	0	0	0	100

[1] N = 458
[2] N = 322
[3] N = 17
[4] More
[5] About Right
[6] Less
[7] Uncertain
[8] No Response
* Per Cents rounded to nearest whole number.

Per Cent of Secondary School Funds Needed for Vocational Education Programs

As revealed in table XII, the per cent of secondary school funds which all three groups indicated should be spent for vocational education in their districts was quite similar, with the superintendents reporting 27.73, the school board presidents 28.17 and the local directors 29.72. There was less than three per cent variation among the various sizes of school districts concerning the portion of funds thought necessary to operate vocational programs, with the exception of districts enrolling 3000 or more students, in which case over 40 per cent was indicated. This compares to an expenditure of only 5.36 per cent of secondary school funds actually spent for vocational education in Missouri in the 1964-65 school year.

Relative Merit of Vocational Education Programs in Relation to Plans for Establishing or Expanding Such Programs

The board presidents were inclined to rate all types of vocational agriculture courses to be of slightly more importance than did the superintendents.

The local directors were very strongly in favor of unit courses designed for training students in occupations related to agriculture.

The degree of homogeneity between the relative merit which the respondents reported for agricultural programs and plans for establishing them showed no significant divergence. However, both the importance placed upon them, as well as possibilities for expansion, were moderately low.

The respondents attached great importance to business and office courses which would prepare full-time high school students for entrance into business and office occupations.

The degree of homogeneity between relative merit attached to business and office courses and the plans for establishing them showed no significant divergence for the superintendents and local directors. However, this relationship was significantly divergent for the board presidents.

With the exception of local directors, the respondents attached more importance to the recently developed preparatory distributive education courses than to the part-time cooperative and adult courses which have been in operation for many years.

The chi-square values were significantly divergent for all but one of the types of courses as reported by the superintendents and board presidents. The responses of the local directors showed no significant divergence for any of the types of courses.

Both the superintendents and the board presidents attached great importance to preparatory courses in health occupations for regular high school students.

Responses for both the superintendents and the board presidents were significantly divergent with respect to the relative merit assigned to each type of health occupations course and the possibility for establishing such courses.

TABLE XII--PER CENT OF SECONDARY SCHOOL FUNDS RESPONDENTS INDICATED SHOULD BE SPENT FOR VOCATIONAL EDUCATION IN THEIR COMMUNITY BY SIZE OF DISTRICT

High School Enrollment in District	Superintendents*			Board Presidents**			Local Directors***		
	No. of Dists.	Number#	Per Cent##	No. of Dists.	Number#	Per Cent##	Number#	Per Cent##
Less than 250	249	181	27.86	187	131	29.17	0	00.00
250-499	118	94	26.14	77	47	25.40	0	00.00
500-999	48	39	29.37	30	23	26.43	3	32.50
1000-1999	25	19	27.37	18	15	24.27	3	31.66
2000-2999	4	4	28.75	3	3	23.33	0	00.00
3000 or over	14	5	41.00	6	3	46.66	1	25.00
Total	458	342	27.73###	322	220	28.17###	7	29.72###

*Based on 458 respondents.
**Based on 322 respondents.
***Based on 17 respondents.
#Number of responses from each size district.
##Average of per cent of funds for each size district.
###Average for all size districts combined.

All three groups of respondents attached considerable importance to home economics programs which are designed for gainful employment. In general, the plans for establishing and expanding home economics programs were closely aligned with the importance attached to them.

The majority of each of the three groups placed considerably more importance on technical courses for regular high school students than for other types of technical courses identified. Without exception, the responses from the superintendents and board presidents were highly divergent. The responses of the local directors' plans for establishing technical education programs were much in accordance with the importance attached to them.

All three groups of respondents again reported that a much greater importance was attached to day trade preparatory courses which were designed for regular high school students than for any of the other types of trade and industrial courses. Local directors attached much greater importance to all trade and industrial education courses.

All three groups of respondents attached great importance to both types of area vocational schools which may be organized in the state. The importance attached to area vocational schools was affected very little by the size of the school district. The responses from the superintendents were much more divergent in this case than those of the board presidents for both types of area vocational schools.

While only a small portion of the board presidents and superintendents reported that vocational guidance and counseling services were of "no value" to their districts, only a little over one-half of them reported such services to be of "much value."

Plans for establishing vocational guidance programs reported by superintendents and board presidents were found to be highly divergent from even the moderate importance attached to them.

Considerable importance was shown to be attached to work-study programs. Plans for establishing work-study programs as reported by superintendents and local directors were in harmony with the importance attached to these programs, while the responses of board presidents revealed significantly divergent results in this report.

Enrollment in Missouri High School Vocational and Non-Vocational Programs in Relation to Distribution of the Labor Force in the United States and Missouri

As shown in Figure 2, a comparison of the distribution of the labor force in Missouri with the enrollment in vocational programs related to the occupational groups in the labor force, reveals considerable imbalance. The only occupational groups where the per cent of school enrollments even remotely approaches the per cent employed in the groups are farming, clerical and kindred workers and domestic services and related occupations. However, it should be noted that only a limited portion of courses related to clerical and kindred

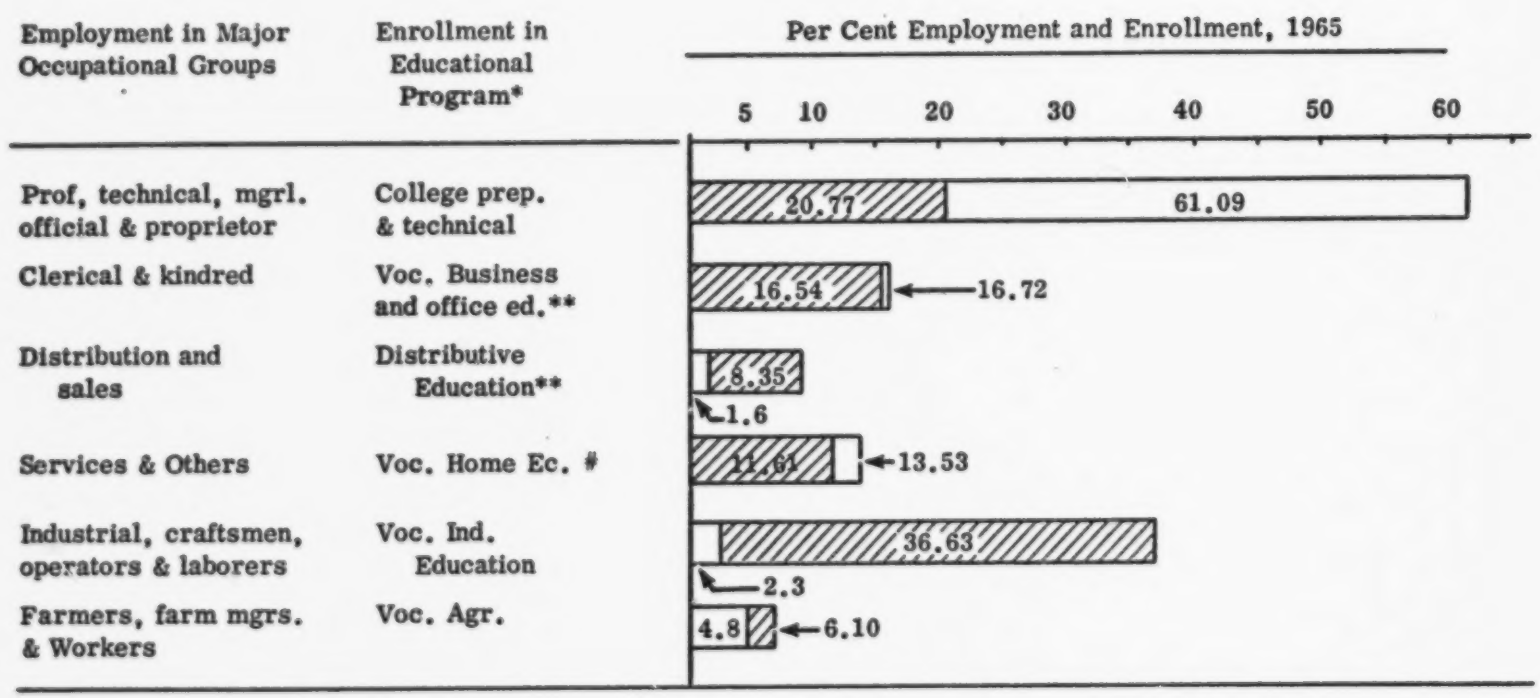

FIGURE 2

MISSOURI EMPLOYMENT IN MAJOR OCCUPATIONAL GROUPS IN RELATION TO ENROLLMENT IN HIGH SCHOOL EDUCATIONAL PROGRAMS

Employment ▨ Enrollment □

*1965 total high school enrollment of 254,081.

**Business and office courses that were titled similar to those planned for reimbursement are included here.

#1965 enrollment in home economics programs was primarily for training homemakers.

(business education courses) have been considered to prepare for employment. The enrollments in home economics, which is usually considered to be related to domestic and many service occupations, are somewhat misleading as practically all home economics offered in the public schools thus far has been designed to train for home and family life rather than for gainful employment.

While, in 1965, just over 20 per cent of the Missouri labor force was actually engaged in professional, technical, managerial and proprietor occupations combined, over 61 per cent of the public high school youth of the state were enrolled in college preparatory programs, and presumably headed for the professions, an impossible objective for many, if not most of them.

Whereas about 36 per cent of the Missouri labor force was engaged in occupations in industrial, craftsman, operative and laborer categories, less than three percent of the students were enrolled in courses which train for such jobs.

Enrollment in Vocational-Technical Programs in Missouri with Projections to 1970

As revealed in table XIII, the projected enrollment in vocational programs to 1970 reveals considerable expansion may be expected in all vocational programs with a much greater increase in programs which presently have a very low enrollment, mainly distributive education, health occupations and technical occupations

Enrollments in the various vocational programs in Missouri were found to be distributed in about the same ratio as enrollments in such programs for the nation.

There was almost a 30 per cent overall increase in enrollment in vocational courses from 1960 to 1965. This was only slightly more than the total per cent increase in enrollment in the public schools. During the period from 1965 to 1970 the projected total enrollment increase in the public schools is expected to be about ten per cent while the projected enrollment in vocational education was computed to increase by over 60 per cent. Most of this increase is anticipated to be in programs that already enroll the largest number of vocational students, and in some cases, the per cent of enrollment exceeds the per cent of employment in their related occupational groups in the labor force. The vocational programs which are presently low in enrollment in relation to manpower needs, although they will make considerable gain, will remain far short of the requirements of the labor force in their related occupational group, unless, of course, some redirection takes place during the ensuing years.

Summary and Conclusions

Insofar as the facts and opinions obtained were accurate and the estimates made in this study were valid, the following conclusions may be drawn as of the time the study was made.

Without doubt, there is a serious inadequacy of vocational education programs in most secondary schools in Missouri. This inadequacy exists among districts of all sizes.

TABLE XIII--MISSOURI HIGH SCHOOL ENROLLMENT IN VOCATIONAL EDUCATION PROGRAMS PROJECTED TO 1970

Vocational Education	Actual 1960		Actual 1965		Projected 1970		Per Cent Change in Vocational Enrollment	
	Number Voc. Enroll.	Per Cent* Total Enroll.	Number Voc. Enroll.	Per Cent* Total Enroll.	Number Voc. Enroll.	Per Cent* Total Enroll.	1960-65	1965-70
Agric. Edu.	11,824	6.03	12,180	4.79	19,595	7.05	3.01	60.88
Business & Office Education**	31,304**	15.97	42,482**	16.72	63,480**	22.82	35.71	49.43
Distributive Education##	1,722	.88	4,041	1.59	9,975	3.59	334.67	146.85
Health Occupations	843	.43	909	.36	2,499	.90	7.83	175.00
Home Economics	22,734	11.60	34,386	13.53	54,405	19.56	51.25	58.22
Technical Edu.	94	.05	1,338	.53	4,311	1.55	1,423.40	222.22
Trade & Indus.	4,348	2.22	5,792	2.28	9,089	3.29	33.21	56.94
Total Voc. Enroll.	72,869	37.18	101,128	39.80	163,354	58.76	38.98	61.53
Total Sec. Enroll.	195,980		254,081		278,066		29.65	9.44

*Based on Vocational enrollment as per cent of total high school enrollment.
**Enrollments are shown for courses which are similar in purpose to those that may be reimbursed in 1965-66.
Portion of enrollments shown is for courses which are similar in purpose to those that may be reimbursed in 1965-66.

During the next five-year period there will be a considerable increase in all types of vocational programs throughout the state. A large number of practical arts courses, especially in business education and industrial arts, which may be taken for more than two years in the upper-grade levels, will probably be converted to reimbursable vocational courses.

Considerable expansion is needed in vocational education at the high school, post-high school and adult levels. The greatest need for expansion is in business education courses and trade and industrial courses at the high-school level. Post-secondary courses will likely be added to only a small portion of the high schools.

Very few traditional programs of vocational agriculture are likely to be added and most of the existing programs in this area will be modified by the introduction of unit courses for training in occupations related to farming. There appears to be no intention on the part of school administrators to limit enrollment in vocational agriculture to those expecting to enter farming.

It appears that school superintendents and board presidents are either unaware of the need for occupational training in certain areas—health, technical, trade and industrial occupations—or they are indifferent to this need.

It is evident that superintendents, school board presidents and local directors of vocational education alike are inclined to place much less importance on vocational programs for post-high school youth and adults than for those serving regular high school students. It also seems evident that much agreement exists between superintendents and board presidents in both the importance attached to vocational education programs as well as the plans for establishing them. Board presidents are inclined to attach slightly less importance to the majority of the programs. It should be observed, however, that the local directors represent viewpoints from only the 17 largest districts of the state.

In selecting teachers for vocational programs, the most emphasis will likely be placed on personal characteristics and occupational competency exhibited by individuals being considered.

Few districts will add courses for training in single-skilled and semi-skilled occupations and those that are added will likely be at the 11th and 12th grade levels.

The type of assistance relative to vocational programs which administrators will most favorably seek from the State Department of Education is help in establishing and organizing these programs in their communities.

In the professional preparation of school administrators more emphasis should be placed on principles and practices, and organization and administration of vocational education, both in the form of formal courses and in-service short courses.

A reimbursement rate of at least 50 per cent will be necessary to establish new vocational programs in the large majority of school districts. In seeking reimbursement, administrators are likely to place most emphasis on financial assistance in purchasing equipment and in paying the salaries of teachers. One of the chief objections which is likely to arise in promoting vocational programs

is the problem of extra administrative duties involved in negotiating and record keeping for reimbursement.

The portion of secondary school funds which is currently being spent in Missouri for vocational education is only about one-sixth of the amount that respondents reported should be spent, and the distribution of such funds by vocational areas reflects great imbalances between expenditures and the number of persons employed in related occupational fields. State funds are due to lag far behind local and federal sources for financing vocational programs.

Unit courses designed to train students in occupations related to farming are thought to be the most valuable type of agricultural course and many districts may be expected to establish them.

Business and office occupations courses designed for training regular high school students for gainful employment will be one of the mose frequently developed vocational courses to be developed within the next few years.

Although a considerable number of secondary schools will establish home economics courses designed for gainful employment, it does not appear that such courses will reduce the enrollments in traditional home economics courses. This raises the question of the desirability of continuing the practice of spending a large portion of vocational education funds in the area of home economics.

Several school districts will add technical education programs, but the number will not be nearly as great as the value attached to these programs would indicate. Much financial assistance and promotion will be needed to develop such programs.

Since plans for establishing vocational guidance programs are not extensive, it appears that the value, need and function of vocational guidance as an essential phase of a total vocational program is apparently not well understood by many school administrators. A wide disparity seems to exist between the moderate degree of interest shown and the efforts made to receive approval for reimbursement of counselors from vocational funds.

Work-study programs for vocational students are likely to be established by a large number of communities if sufficient funds are made available for this purpose.

There is much interest in the establishment of area vocational schools, but there are many areas in which no immediate plans for such schools exist. Thus, considerable promotion of area schools is needed to secure their establishment in needed areas as well as to promote the full potential of those recently established or approved to serve all the potential students in their areas.

Considerable imbalance exists in enrollment in Missouri vocational programs as related to occupational groups and the number of persons employed in these occupations.

Over three-fourths of the total increase in vocational education in the state may be expected in those programs already having the largest enrollment.

However, the greatest per cent of increase in vocational programs will be in courses which currently have low enrollment, but the projected expansion in these areas will fall far short of anticipated needs.

Recommendations

In view of the findings and conclusions of this study, the following recommendations are made:

Since both enrollments in many vocational programs and the amount of funds spent in them are grossly out of line with the per cent of employment in the occupational groups for which these programs prepare, it is recommended that a careful analysis be made of all existing and new vocational programs in light of manpower needs of the labor force of Missouri and the nation. A system should be set up which would encourage deviation from established patterns of program development and promote more growth in the areas needed.

In light of anticipated expansion of teaching personnel, supervisory positions and new programs, the state department of education should expand its supervisory staff in all vocational areas, especially in business education, health occupations, distributive education, technical education, and trade and industrial education in order to more effectively assist local schools in organizing and operating vocational programs in these areas.

Both preparatory and in-service vocational teacher education programs and leadership development programs should be expanded in order to meet impending demands for such personnel.

In-service short courses should be established to assist local school administrators with organizational and administrative procedures as well as to acquaint them with procedures in ascertaining vocational training needs. Institutions training school administrators should incorporate in the graduate programs of these people, courses on principles and practices as well as organization and administration of vocational education.

New means should be sought for providing increased state financial support commensurate with increased local and federal funds in order to enable districts which lack financial means to establish needed programs.

A careful study should be made of areas of the state which are not being served by area vocational schools and where necessary develop promotional programs to encourage districts in these areas to cooperate in establishing such schools.

Further consideration should be given to the establishment of courses to train for occupations related to farming as well as to the establishment of home economics courses designed for gainful employment. Enrollment in such new courses might well be encouraged among students normally enrolling in traditional courses in these areas.

Administrators should carefully analyze the purpose being served by advanced practical arts courses, especially those in business education and industrial arts. Where it is ascertained that such courses could better serve the occupational needs of students, they should be converted to vocational courses.

In view of the small per cent of high school districts which expect to add post-secondary and adult vocational and technical programs to their curriculum, it is recommended that much effort be devoted to the promotion of programs in junior colleges and area vocational-technical schools.

Pilot and experimental programs should be established for training students in single-skilled and semi-skilled occupations at the high school level.

Labor market area surveys should be made in all districts presently conducting vocational programs as well as in proposed areas in which such programs will be established, as it is evident that to continue to establish programs just because they are popular or well-known, may only create a still greater imbalance with labor force needs.

If the vocational training needs of the state are to be met, a far greater portion of secondary education funds must be directed toward establishing vocational and technical programs than has been the case heretofore.

Finally, the findings of this study should be made available to school board members, administrators, counselors and teachers as well as state supervisory personnel to the end that future growth in vocational programs may be directed toward existing needs.